North Dakota Alternate Assessment 1 (NDAA1)

SCIENCE - GRADE 8

For students with significant cognitive disabilities assessed against alternate achievement standards

Picture from Microsoft Clip Art

NORTH DAKOTA STATE ASSESSMENT PROGRAM

North Dakota Department of Public Instruction
Kirsten Baesler, State Superintendent

Welcome to the 2015-16 North Dakota Alternate Assessment 1 for Science. Science is assessed in grade 4, 8, and 11 in North Dakota.

The science test includes six assessment activities based on each of the six North Dakota State Science Content Standards. These six activities will range in complexity from less complex, to more complex, and most complex. All students will be tested on the same six items. Each will include the opportunity to first teach the concept and then to assess it.

Materials are provided for each item. Separate Item Data Sheets are provided for each of the six items. These Item Data Sheets are to be used only for the item specified. Each contain the questions, directions, and data collection space for the item.

Once all six of these Data Sheets are completed the data can be entered into the online NDAA1 portal. You will be entering each response (correct or incorrect).

To start this test:

You will need to print this document on a color printer (if possible).

You may want to mount the pictures onto a half sheet of white or neutral construction paper.

Test Item # 1

Standard 1: Students understand unifying concepts and processes of science.

Benchmark: Understand how models can be used to explain scientific principles.

Test Item: When given an outline of a human body and pictures of parts of the skeletal system, TSW correctly identify and place body parts in approximately the correct location.

Suggested Instructional Activities (before testing):
Teach the different parts of the body and correct locations for bones. The goal is that the student will be able to identify the part and place the part approximately where it belongs on the body form.

Materials: Prepare an outline of the human body and a copy of the parts of the skeletal system: **skull, ribs, leg, hand, foot, spine, and teeth.** Adjust sizes of visuals as needed.

If you cannot find a human body outline, have a small student lay on the floor on top of butcher paper and draw an outline around his/her body.

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

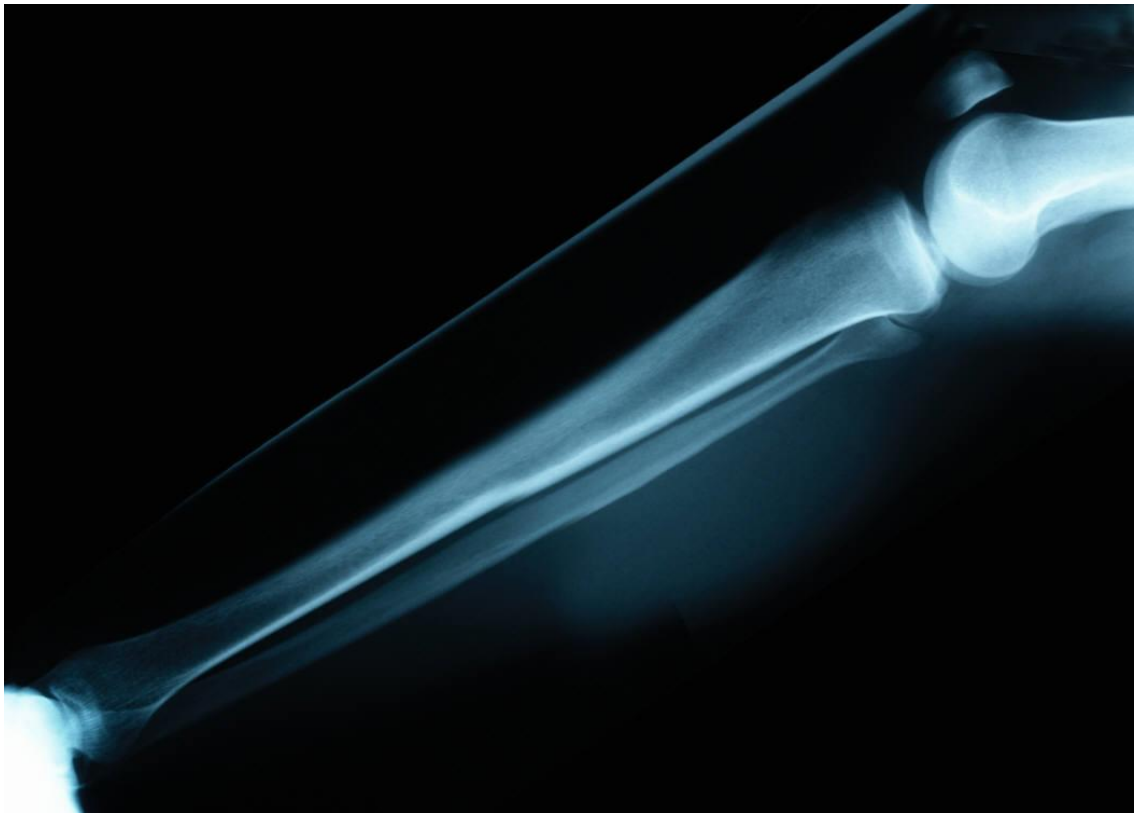
Test administration: Follow the directions on the Data Sheet for this item. The directions tell you which pictures to use and what questions to ask for each item.

teeth

rib cage

skull

hand bones



Leg bone

spine

Foot

Directions for testing: Present items as identified on the data sheet.
"Show" means hold the pictures up for the student to see.
"Place" means place the picture or object on the table or wall in front of the student.
"Say or ask" means this is the verbal question the teacher should ask for this item.

No additional verbal, gestural, or physical prompting is allowed.

Yellow highlight indicates the correct answer.

Data Sheet for Test Item # 1 Name_____

+ for correct answer - for incorrect

Question Content	DATA
1. Show **Leg** and **Spine** pictures and say, "Which is the spine?"	
2. Ask, "Where is the spine located on the body?" Trunk area	
3. Show the **Skull** and **Ribs** and say, "Which is the skull?"	
4. Ask, "Where is the skull located on the body?" Head area	
5. Show the **Foot** and **Hand** and say, "Which is the foot?"	
6. Ask, "Where does the foot belong on the body?" Foot area	
7. Show the **Teeth** and **Rib cage** and say, "Which is the rib cage?"	
8. Ask, "Where does the rib cage belong on the body?" Trunk area	
9. Show **Hand** and **Leg** and say, "Which is the hand?"	
10. Ask, "Where does the hand belong on the body?" Hand area	
TOTAL Correct Answers	Total

The student may respond in whatever means necessary to answer each question (e.g., point, verbal response, eye gaze, yes/no, communication board) as appropriate to the student's communication mode.

Test Item #2

Standard 2: Students use the process of science inquiry.

Benchmark 2.1 Understand how questions that can be answered by scientific inquiry differ from those that cannot.

Administration Guidelines: There are no specific materials provided for this assessment activity other than the directions, Data Sheet, and the Experiment Sheet.

Text question/task: The student will use scientific tools (timer, meter stick) to conduct a simple class investigation and communicate the results (e.g., using a data table).

The student may respond in whatever means necessary to answer each question (e.g., point, verbal response, eye gaze, yes/no, communication board) as appropriate to the student's communication mode.

Teacher Directions:
The activity for this test item is to race different toy cars down a ramp and investigate which will go farthest.

Materials: 3 toy cars/trucks, a ramp of some sort, measuring tape, timer, pencil and recording sheet, and one peer.

The investigation may take several lessons or days to complete. The student may be given some teacher or peer support during the actual data collection, and will be assessed on how well s/he describes what was done and can communicate results.
For instance: The teacher and a peer can set up the experiment. The teacher can ask the questions identified in the Data Sheet the student taking the assessment needs to answer the questions. The peer can measure the distance and record the distance of each trial for the student.

Talk with students about which tools are needed to answer the question, show them how to use the tools, and ask what their predictions are to answer the investigation question. Record the student's prediction on the recording sheet provided. For example, if the investigation is "*which car will go farther down the ramp*," then the predictions could be: the yellow car will go farther, the red car will go farther, the truck will go farther, or all three will go exactly the same distance.

Peer will collect and record data. In the case of racing cars down a ramp, it should be repeated 3 times to be sure of accuracy of the results. As each result is measured and recorded, it should be shared with the student. When all three cars are measured, show the student the results and ask the appropriate questions (on Data Sheet).

Recording Sheet for Experiment

Name

Investigation question- Which car will go furthest down the ramp?

My prediction-

My data table

	Distance down the ramp		
Car	**1st trial**	**2nd trial**	**3rd trial**

My Results

Directions for testing: Present items as identified on the data sheet. "Show" means hold the pictures up for the student to see. "Place" means place the picture or object on the table or wall in front of the student.
"Say or ask" means this is the verbal question the teacher should ask for this item.

No additional verbal, gestural, or physical prompting is allowed.

Yellow highlight indicates the correct answer.

Data Sheet for Test Item # **Name**_____

+ for correct and - for incorrect

Question Content	DATA
1. Show the **Timer** and **Measuring tape** and ask, "which tool would you use to measure which car travels the farthest?"	
2. Say, "Which car do you think will go farthest?" This is your "**prediction**". Student chooses one car.	
3. Show results of trial one (1st three lengths). Say, "Which car went **farthest**?"	
4. Show results of trial two (2nd three lengths). Say, "Which car went the **farthest**?" correct or incorrect answer	
5. Show results of trial three (3rd three lengths). Say, "Which car went the **farthest**?" correct or incorrect answer	
6. Look at the **results from all three trials**. Which car went the farthest of all? correct or incorrect answer	
7. Was your **prediction correct**? Yes or No	
8. Which car went the **shortest distance** in trial one?	
9. Which car went the **shortest distance** in trial two?	
10. Which car went the **shortest distance** in trial three?	
TOTAL Correct Answers	Total

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

Test Item # 3

Standard 1: Students understand the basic concepts and principles of physical science.

Benchmark 3.1: Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery).

Suggested Instructional Activities (before testing)

Students investigate how different sources of energy (heat, light, electrical, mechanical, stored in food) move objects and materials and causes processes to occur (e.g., photosynthesis, metabolism, food webs). The instructional focus should be on making connections between the energy being transferred from a source to cause something to happen (something moves, lights up, uses the energy to grow or move, etc.).

Test Item: When presented or shown a variety of items, TSW indicate whether each item is using energy (e.g., "Is this object/item using energy right now?")

Teaching Directions:

The teacher should identify which five (classroom) items to present to the student. Items include: two things that can be presented as turned "on" and again as "off" (light, radio, computer), a live plant (using sun's energy, using nutrients), a piece of clothing using no energy (shoe, shirt, or something like a backpack). There are several pictures included as well.

Direct the student's attention to the item.

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

Materials:

Pictures are provided. Follow the directions on the Data Sheet for this item. Use real items to teach the concept where appropriate.

Person opening door

Squirrel eating nut

Sun shining on plant

Person riding bike

Directions for testing: Present items as identified on the data sheet. "Show" means hold the pictures up for the student to see. "Place" means place the picture or object on the table or wall in front of the student.
"Say or ask" means this is the verbal question the teacher should ask for this item.

No additional verbal, gestural, or physical prompting is allowed.

Yellow highlight indicates the correct answer.

Data Sheet for Test Item # Name_____

Correct + Incorrect -

Question Content	DATA
1. Show a computer that is turned on and **Say**, "Is this computer using energy right now?" YES	
2. Show a backpack and **Say**, "Is this backpack using energy right now?" NO	
3. Show a live plant and **Say**, "Is this plant using energy right now?" YES	
4. Show an object that is "on" and **Say**, "Is this _____ using energy right now?" YES	
5. Show the lights in the room "on" and then turn them "off" and **Say**, "Is this light using energy right now?" object that is "off" NO	
6. Energy transfer: Show your finger pushing the keyboard buttons and say, "Is the energy transferred from finger to button or button to finger?	
7. Show **Sun shining on plant - "Is the energy** transfer from plant to sun or sun to plant?	
8. Show **Person opening door - "Is the energy** transfer from car door to person or person to car door?	
9. Show **Squirrel eating nut- is the energy** transfer from squirrel to nut or nut to squirrel?	
10. Show **Person pedaling bike - "Is the energy t**ransfer from person/legs to bike or bike to person/legs?"	
TOTAL Correct Answers	Total

No additional verbal, gestural, or physical prompting is allowed.

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

Test Item # 4

Standard 4. Students understand the basic concepts and principles of life and science.

Benchmark 4.5 Understand the cause and significance of diversity and adaptations of organisms

Suggested Instructional Activities (before testing)
Students understand that scientists use criteria to sort and classify organisms (e.g., producer-consumer; herbivore-carnivore-omnivore; bird-mammal-fish-reptile-amphibian; flowering-non-flowering plants; etc.). Students have opportunities to make observations about differences in plants and animals and sort and classify them into them scientific categories.

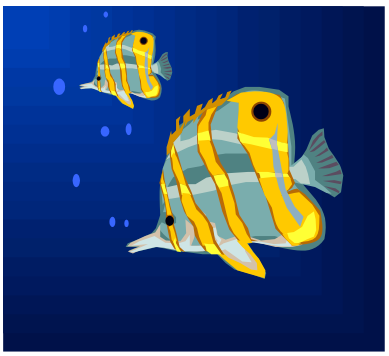
Administration Guidelines: There are pictures of a variety of plants and animals provided for this assessment activity. **Assessments for plants and animals should be done on separate testing days.**

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

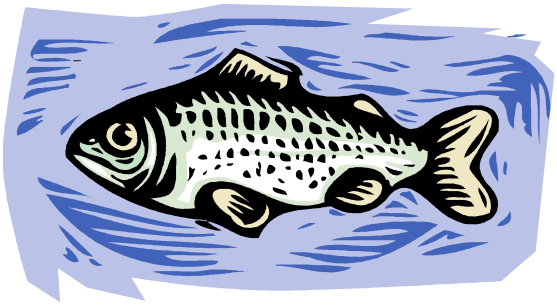
Test Item: Given different taxonomic groups and picture cards, TSW will locate and categorize the plant or animal into the correct taxonomic group.

Teacher directions:
Print the picture cards provided.

Present student with the taxonomic groups and pictures for plants OR animals.
Say, "You are going to sort these animals/plants into the correct groups.
Put each picture in the correct group.
Groups include:
FISH
BIRD
MAMMAL
FLOWERING PLANTS
NON-FLOWERING PLANTS

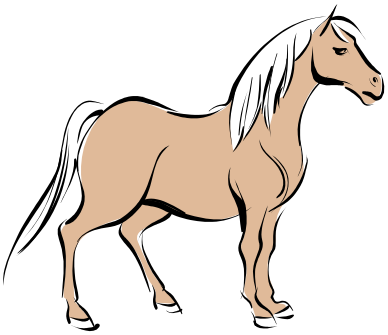


F1



F2

M1



M2

M3

B1

B2

B3

P1

P2

P3

P4

P5

P6

Assessments for plants and animals should be done on separate testing days.

Directions for testing: Present items as identified on the data sheet. "Show" means hold the pictures up for the student to see.
"Place" means place the picture or object on the table or wall in front of the student.
"Say or ask" means this is the verbal question the teacher should ask for this item.

No additional verbal, gestural, or physical prompting is allowed.

Yellow highlight indicates the correct answer.

Data Sheet for Test Item # Name_____

+ for Correct - for incorrect

1. Show F1 and B1 and say, "which belongs to the **FISH** group?" F1	
2. Show M3 and F2 and say, "Which belongs to the **mammal** group?" M3	
3. Show B2 and F1 and say, "Which belongs to the **bird** group?" B2	
4. Show M2 and B3 and say, "Which belongs to the **mammal** group?" M2	
5. Show M1 and B1 and say "Which belongs to the **bird** group?" B1	
6. Show P3 and P4 and say, "Which belongs to the **flowering** plant group?" P3	
7. Show P5 and P1 and say, "Which belongs to the **non-flowering** plant group?" P5	
8. Show P6 and P2 and say, "Which belongs to the **flowering** plant group?" P2	
9. Show P1 and P6 and say, "Which belongs to the **flowering** plant group?" P1	
10. Show P3 and P5 and say, "Which belongs to the **Non-flowering plant group?"** P5	
TOTAL Correct Answers	Total

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

Test Item # 5

Standard 5. Students understand the basic concepts and principles of earth and space science.

Benchmark 5.2: Explain how seasons affect organisms. (e.g., hibernation and migration)

Suggested Instructional Activities (before testing)

Students learn to recognize that organisms respond to changes in their environments. Plants grow towards the light and many plants become dormant in colder months. Animals migrate, hibernate, or find ways to stay and survive in harsh environments. Students should have opportunities to investigate how organisms survive in the "local" environment, as well as explore environments that are not like those in North Dakota (e.g., where do some of our birds go in the winter, and which birds stay in ND?).

Test Item: Given examples of different organisms, TSW indicate whether the organism hibernates or migrates in winter months.

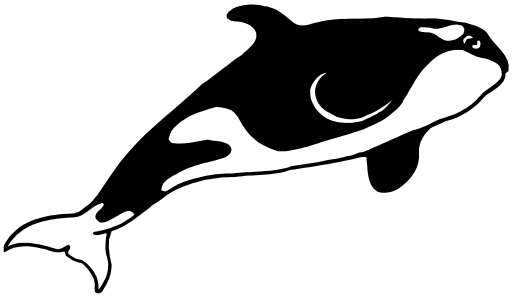
Materials: Picture cards and T-Chart

Teacher directions: Prepare pictures of organisms and a T-chart with "hibernate" and "migrate" at the top prior to the assessment. Teachers may want to also add symbols or picture cues to the words to help students read the words. Present the student with a picture of an organism, one at a time.

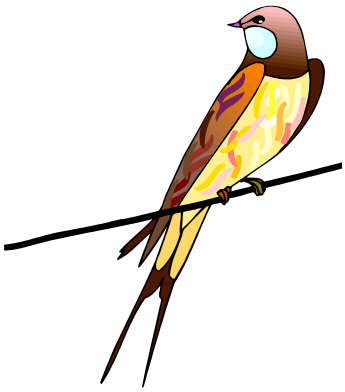
Say, "Here is a picture of a _____. Does a _____hibernate or migrate in the winter?" (Teacher points to terms hibernate and migrate on the T-chart when reading the words.) Student indicates response and the picture can be placed under the heading selected by the student.

Testing directions:

Follow the Data Sheet questions and directions to test and record answers.

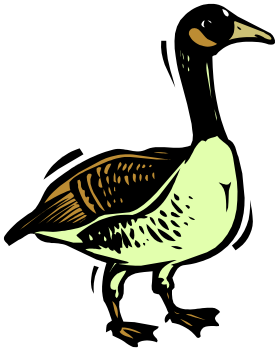


whale



swallow

Butterfly

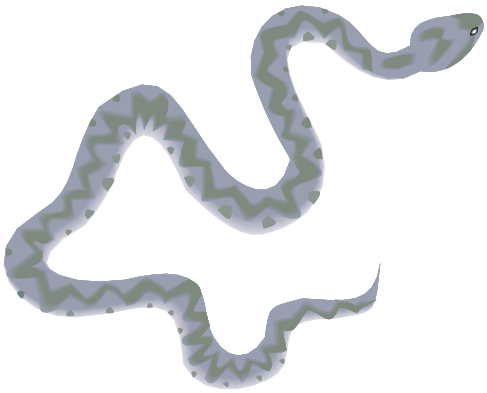


goose

Black bear

frog

Robin



Snake

Squirrel

Skunk

Directions for testing: Present items as identified on the data sheet. "Show" means hold the pictures up for the student to see. "Place" means place the picture or object on the table or wall in front of the student.
"Say or ask" means this is the verbal question the teacher should ask for this item.

No additional verbal, gestural, or physical prompting is allowed.

Yellow highlight indicates the correct answer.

Data Sheet for Test Item # 5 **Name**_____

+ for correct response and - for incorrect

Question	Data
1. Butterfly (migrate or hibernate) in the winter?	
2. Geese (hibernate or migrate) in the winter?	
3. Squirrel (hibernate or migrate) in the winter?	
4. Whale (hibernate or migrate) in the winter?	
5. Snake (hibernate or migrate) in the winter?	
6. Swallow (migrate or hibernate) in the winter?	
7. Frog (hibernate or migrate) in the winter?	
8. Black bear (migrate or hibernate) in the winter?	
9. Robin (migrate or hibernate) in the winter?	
10. Skunk (hibernate or migrate) in the winter?	
TOTAL Correct Answers	Total

The student may respond in whatever means necessary to answer each question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

Test Item # 6

Standard 6: Students understand relations between science and technology.

Benchmark 6.1: Use appropriate technologies and techniques to solve a problem (e.g. computer-assisted tools, Internet, research skills).

Suggested Instructional Activities (before testing)
Students recognize a variety of common tools/technology and their uses in the real world. Students are encouraged to use a variety of technologies (calculator, printer, computer, email, Internet, science data collection tools, assistive technology) in school and at home for specific purposes.

Standard 6, Benchmark 6.1 – Less Complex
Text question/task: When given a variety of technology applications, TSW match them with where they are typically used (school science lab, office, or hospital).

Teacher Directions:
Prepare technology pieces of equipment for the 3 different locations using the visuals provided. Read or describe each location and each tool/technology presented. Teachers may create a sorting sheet with 3 columns or boxes (school science lab, office, and hospital) if desired.

Say, "People use technology for different jobs in different places. You will match each technology tool with where it would probably be used."

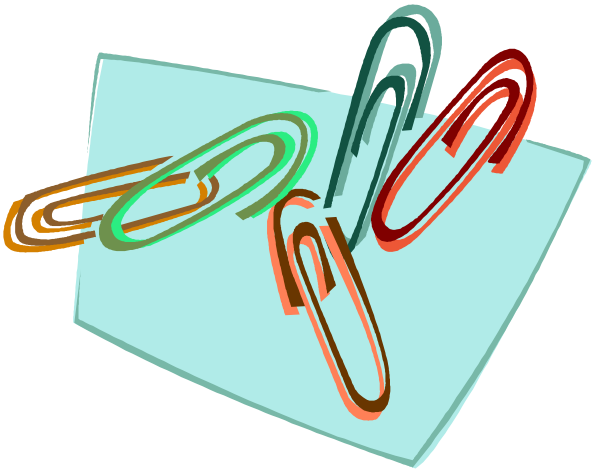
Materials:
Pictures and real objects.

Follow the questions on the Data Sheet for this item for testing.
Use pictures and questions provided.

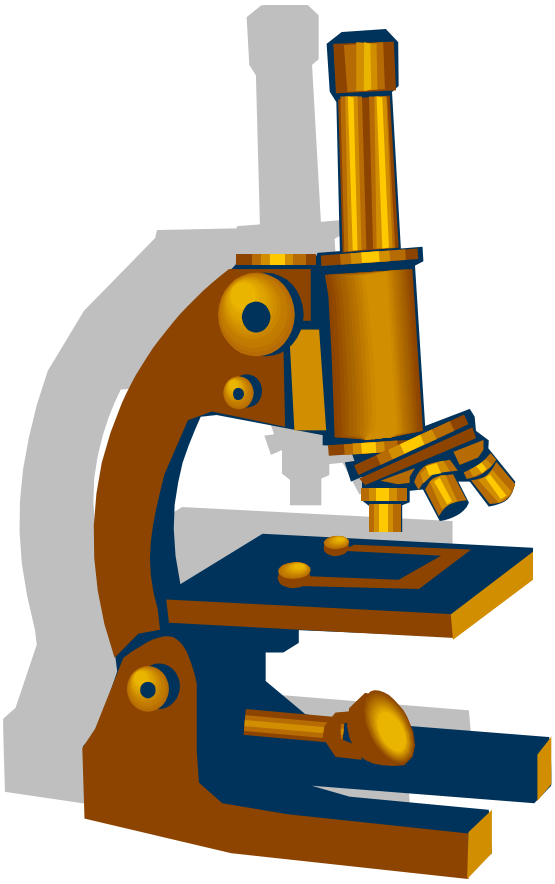
The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.

X-ray

Stapler



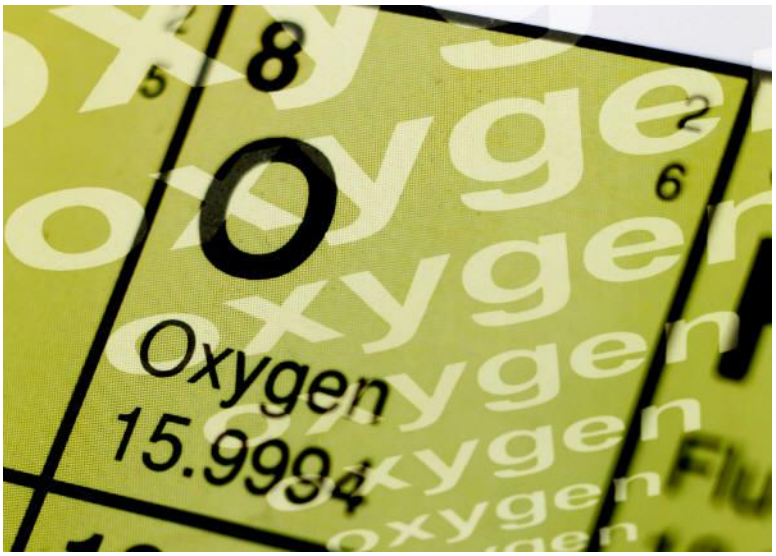
paper clips



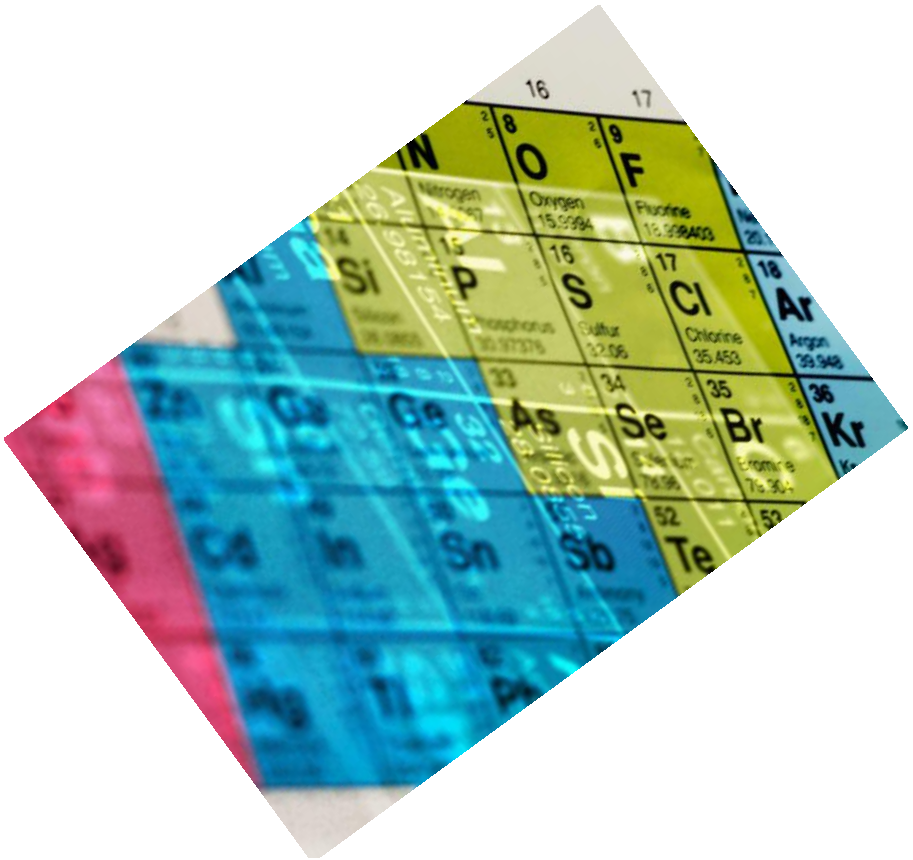
Microscope

Hypodermic Needle

Gurney



Periodic Table of Elements



Lab Beakers

Computer

Safety glasses

Data Sheet for Test Item # 6 **Name**_____

Correct + **Incorrect -**

Question Content	DATA
1. Ask, "Where would you use an **X-Ray machine**?" School science lab, office, or hospital	
2. Ask, "Where would you use a **stapler**?" School science lab, office, or hospital	
3. Ask, "Where would you use glass beakers?" School science lab, office, or hospital	
4. Ask, "Where would you use a hypodermic needle?" School science lab, office, or hospital	
5. Ask, "Where would you use a microscope?" School science lab, office, or hospital	
6. Ask, "Where would you use paper clips?" School science lab, office, or hospital	
7. Ask, "Where would you use the Periodic Table of Elements?" School science lab, office, or hospital	
8. Ask, "Where would you use a gurney?" School science lab, office, or hospital	
9. Ask, "Where would you use a computer to keep track of student class schedules ?" School science lab, school office, or hospital	
10. Ask, "Where would you use goggles?" School science lab, office, or hospital	
TOTAL Correct Answers	Total

The student may respond in whatever means necessary to answer each categorization question (e.g., point, verbal response, eye gaze, yes/no, gesture, communication board) as appropriate to the student's communication mode.